

In re Application of:

Su et al.

Application No.: 10/667,776

Filed: September 22, 2003

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PATENT

Atty Docket No.: INTEL1340-1(P14243X)

### **Amendments to the Claims**

Please amend claims 1 and 31 as indicated in the listing of claims.

Please cancel claims 11-30 without prejudice or disclaimer.

The listing of claims will replace all prior versions, and listings of claims in the application:

### **Listing of Claims:**

1. (Currently amended) A method of detecting and/or identifying analytes comprising:
  - a) obtaining one or more probe molecules that bind to one or more target analytes;
  - b) attaching the probe molecules to one or more cantilevers;
  - c) exposing the probe molecules to at least one sample suspected of containing one or more target analytes;
  - d) deflecting the cantilever; ~~and~~
  - e) imposing a counterbalancing force to restore the cantilever to its original position; and
  - f) detecting and/or identifying the analytes from the magnitude of the counterbalancing force required to maintain the cantilever in its original position.
2. (Original) The method of claim 1, wherein the target analytes have a net electrical charge.
3. (Original) The method of claim 2, wherein the cantilever is deflected in response to an electrical potential gradient.
4. (Original) The method of claim 1, wherein the cantilever is deflected in response to a change in surface tension.
5. (Original) The method of claim 1, wherein the target analytes are selected from the group consisting of an amino acid, peptide, polypeptide, protein, glycoprotein, lipoprotein,

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antibody, nucleoside, nucleotide, oligonucleotide, nucleic acid, sugar, carbohydrate, oligosaccharide, polysaccharide, fatty acid, lipid, hormone, metabolite, growth factor, cytokine, chemokine, receptor, neurotransmitter, antigen, allergen, antibody, substrate, metabolite, cofactor, inhibitor, drug, pharmaceutical, nutrient, biohazardous agent, infectious agent, prion, vitamin, heterocyclic aromatic compound, carcinogen, mutagen, waste product, virus, bacterium, Salmonella, Streptococcus, Legionella, E. coli, Giardia, Cryptosporidium, Rickettsia, spore, mold, yeast, algae, amoebae, dinoflagellate, unicellular organism, pathogen, prion and a cell.

6. (Original) The method of claim 1, wherein the probe molecules are selected from the group consisting of antibodies, antibody fragments, single-chain antibodies, genetically engineered antibodies, oligonucleotides, polynucleotides, nucleic acids, nucleic acid analogues, peptide nucleic acids, proteins, peptides, synthetic peptides, binding proteins, receptor proteins, transport proteins, lectins, substrates, inhibitors, activators, ligands, hormones, neurotransmitters, growth factors and cytokines.

7. (Original) The method of claim 1, wherein the probe molecules are oligonucleotides and the target analytes are nucleic acids.

8. (Original) The method of claim 1, wherein the target analytes are proteins or peptides.

9. (Original) The method of claim 8, wherein the probe molecules are antibodies, antibody fragments, genetically engineered antibodies or single chain antibodies.

10. (Original) The method of claim 1, wherein the counterbalancing force is magnetic.

Claims 11-30. (Canceled)

31. (Currently amended) A method of detecting and/or identifying analytes comprising:

- a) obtaining one or more probe molecules that bind to one or more target analytes;
- b) attaching one or more target analytes to one or more cantilevers;
- c) exposing the target analytes to the probe molecules;
- d) deflecting the cantilever; ~~and~~
- e) imposing a counterbalancing force to restore the cantilever to its original position; and
- f) detecting and/or identifying the analytes from the magnitude of the counterbalancing force required to maintain the cantilever in its original position.

32. (Original) The method of claim 31, wherein the target analytes are selected from the group consisting of an amino acid, peptide, polypeptide, protein, glycoprotein, lipoprotein, antibody, nucleoside, nucleotide, oligonucleotide, nucleic acid, sugar, carbohydrate, oligosaccharide, polysaccharide, fatty acid, lipid, hormone, metabolite, growth factor, cytokine, chemokine, receptor, neurotransmitter, antigen, allergen, antibody, substrate, metabolite, cofactor, inhibitor, drug, pharmaceutical, nutrient, biohazardous agent, infectious agent, prion, vitamin, heterocyclic aromatic compound, carcinogen, mutagen, waste product, virus, bacterium, Salmonella, Streptococcus, Legionella, E. coli, Giardia, Cryptosporidium, Rickettsia, spore, mold, yeast, algae, amoebae, dinoflagellate, unicellular organism, pathogen and a cell.

33. (Original) The method of claim 31, wherein the probe molecules are selected from the group consisting of antibodies, antibody fragments, single-chain antibodies, genetically engineered antibodies, oligonucleotides, polynucleotides, nucleic acids, nucleic acid analogues, peptide nucleic acids, proteins, peptides, binding proteins, receptor proteins, transport proteins, lectins, substrates, inhibitors, activators, ligands, hormones, neurotransmitters, growth factors and cytokines.